REMARKS / ARGUMENTS

Status of Claims

Claims 1-30 are pending in the application. Claims 1-30 stand rejected. Applicant has amended Claims 2 and 19, added Claims 31-33, leaving Claims 1-33 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. §102(b), and 35 U.S.C. §103(a), have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Rejections Under 35 U.S.C. §102(b)

Claims 1-5, 13 and 18-22 stand rejected under 35 U.S.C. §102(b) as being anticipated by Riglet et al. (U.S. Patent No. 5,631,975, hereinafter Riglet).

Applicant traverses this rejection for the following reasons.

Applicant respectfully submits that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, *in a single prior art reference*." *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the *** claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Furthermore, the single source must disclose all of the claimed elements "arranged as in the claim." Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. Titanium Metals Corp. v. Banner, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

Applicant respectfully submits that independent Claims 1 and 18 are not anticipated by Riglet. Riglet discloses an image processing system that improves image

quality of video images such as that generated by a videophone. The process taught by Riglet involves the comparison of pixels from a first image with a second image. This process is used to determine if there is movement by comparing the change in a pixels luminance between the first and second image to a threshold. If the pixel change from the first image to the next is greater than a threshold, the process marks that pixel as movement. Riglet teaches that since the background does not change, or at least change greatly from one frame/image in a video to the next, the process can determine which portion of the image is the person, and which is the background. Thus by comparing the pixels in a "<u>succession of images</u>" the pixels associated with the person can be separated from the background. [Riglet, col. 4, lines 45-50 (emphasis added)]. Pixels that are associated with the background is given a zero luminance.

In contrast to Riglet, independent Claims 1 and 18 are addressed to a method for processing "a" digital image related to "an" imaged object. Applicant respectfully submits that the teaching of Riglet, which processes multiple successive images to determine which areas of the image is the object of interest, is not applicable to the processing of a single image. Riglet makes the determination by comparing the same pixel in two different images. The method disclosed in the present application, such as at Paragraph [0014], teaches that this determination is made from a single image by comparing the pixel intensity to a tunable threshold. Accordingly, Applicant respectfully submits that Riglet does not disclose a method for processing a single digital image and absent this disclosure, independent Claims 1 and 18 are neither anticipated by nor obvious in light of Riglet. Reconsideration and withdrawal of this rejection is respectfully requested.

Applicant also respectfully submits that dependent Claims 2-5, 13 and 19-22 which depend either directly or indirectly from independent Claims 1 and 18 and incorporate all of the limitations of the parent claim are also not anticipated by Riglet. These dependent claims are patentable for the reasons stated above, and also contain further limitations not found in the cited prior art. For example, Claims 2 and 19 include the limitation that the transition region is calculated by a gradient constrained hysteresis

threshold method. Applicant respectfully submits that neither Riglet, nor the other cited prior art references teach, disclose or suggest the claimed gradient constrained hysteresis threshold method limitation. Accordingly, Applicant respectfully submits that dependent Claims 2-5, 13 and 19-22 are not anticipated by nor obvious in light of Riglet. Reconsideration and withdrawal of this rejection is respectfully requested.

Accordingly, Applicant submits that Riglet does not disclose all of the claimed elements arranged as in the claim, and absent anticipatory disclosure in Riglet of each and every element of the claimed invention arranged as in the claim, Riglet cannot be anticipatory. Accordingly, Applicant respectfully submits that the Examiner's rejection under 35 U.S.C. §102(b) has been traversed, and requests that the Examiner reconsider and withdraw of this rejection.

Rejections Under 35 U.S.C. §103(a)

Claims 6, 23 and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Riglet in further view of Mukherjee et al. (U.S. Publication No. 2005/0055658, hereinafter Mukherjee).

Regarding Claims 6, 23, 24, the Examiner acknowledges that Riglet does not specifically disclose the forming of a gradient magnitude that is within a gradient tolerance value and looks to Mukherjee to cure this deficiency.

Claims 7 and 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Riglet in view of Mukherjee and Harrington (U.S. Patent No. 6,580,812, hereinafter Harrington).

Regarding Claims 7 and 28, the Examiner acknowledges that the combination of Riglet and Mukherjee does not show the claimed method of calculating incremental transition regions where each has an incrementally larger gradient tolerance value until the threshold is met or exceeded, and looks to Harrington to cure this deficiency.

Claims 8-10, 25 and 29 are rejected under 35 U.S.C. §103(a), as being unpatentable over Riglet, Mukherjee and Harrington as applied to Claim 7, 24 and 28

respectively above, and further in view Avinash (U.S. Patent No. 6,173,083, hereinafter Avinash) and Nichani (U.S. Patent No. 6,061,476, hereinafter Nichani).

Regarding Claims 8-10, 25 and 29, the Examiner acknowledges that the combination of Riglet, Mukherjee, and Harrington does not show the claimed method of using a focus parameter to calculate a transition area, and looks to Avinash and Nichani to cure this deficiency.

Claims 11,12, 26 and 27 are rejected under 35 U.S.C. §103(a), as being unpatentable over Riglet, Mukherjee, Harrington, Avinash and Nichani as applied to Claim 8 and 25 above, and further in view of Braier et al. (U.S. Patent No. 5,694,478, hereinafter Braier).

Regarding Claims 11, 12, 26 and 27, the Examiner acknowledges that the combination of Riglet, Mukherjee, Harrington, Avinash and Nichani does not show the method of suppressing pixel intensities in the background region by gradually reducing the intensity of background pixels to zero as a function of their distance from the object region and looks to Braier to cure this deficiency.

Claim 14 is rejected under 35 U.S.C. §103(a) as being unpatentable over Riglet as applied to Claim 13 above, and further in view of Nichani).

Regarding Claim 14, the Examiner acknowledges that Riglet fails to show the method of defining a final foreground mask as the initial foreground region and defining the final transition mask as the difference between the object region and the final foreground region. The Examiner also acknowledges that Rigelet fails to show the method of defining a final background mask as the remainder of the image. The Examiner looks to Nichani to cure these deficiencies.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riglet and Nichani as applied to Claim 14 above, and further in view of Braier.

Regarding Claims 15 and 16, the Examiner acknowledges that Riglet and Nichani fail to show the method of suppressing pixel intensities in the background region by gradually reducing the intensity of the background pixels to zero as a function of the distance from the object region and looks to Braier to cure this deficiency.

Claim 17 and 30 are rejected under 35 U.S.C. §103(a) as being unpatentalbe over Riglet as applied to Claim 1 above, and further in view of Avinash.

Regarding Claims 17 and 30, the Examiner acknowledges that Riglet fails to show a method of using a digital image that is created from a medical imaging process and looks to Avinash to cure this deficiency.

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

For the reasons discussed above with respect to independent Claims 1 and 18, Applicant respectfully submits that Claims 6-12, 14-17, and 23-30 are not obvious in light of Riglet either by itself, or in light of the proposed combinations of Mukherjee, Harrington, Avinash, Nichani, and Braier since Riglet teaches a method of identifying a foreground and background regions based on a comparison of the same pixel in two different images. Applicant respectfully submits that, at best, if the teachings of Riglet are combined with Mukherjee, Harrington, Avinash, Nichani, or Braier as proposed by the Examiner, the resulting combination would still require two successive images in order to determine which regions were the foreground and background regions. Further, Applicant respectfully submits that if the teachings of Riglet are combined with Mukherjee, Harrington, Avinash Nichani, or Braier as proposed by the Examiner, and applied to a single image, the result would be that the entire image would be treated as background since none of the pixels would change to reflect movement. Accordingly, Applicant submits that absent a teaching or suggestion of each and every element of the instant invention in such a manner as to perform as the claimed invention performs, dependent Claims 6-12, 14-17 and 23-30 are not obvious in light of Riglet either by itself,

or in any combination with Mukherjee, Harrington, Avinash, Nichani, or Braier. Reconsideration and withdrawal of these rejections is respectfully requested.

With respect to Claims 11, 12, 26 and 27, Applicant respectfully submits that Claims 11,12, 26 and 27 are not obvious in light of Riglet, Mukherjee, Harrington, Avinash and Nichani and further in view of Braier. Braier discloses a method of detecting microbial colonies. In the Office Action, the Examiner refers to col. 8, lines 45-50 as showing the claimed limitation of suppressing pixel intensities to zero as a function of their distance from the object region. Applicant respectfully disagrees with the Examiners understanding of Braier. Braier discloses a method of detecting microbial colonies and the method uses a first and second image. The section cited by the Examiner does state that there is a Gaussian distribution in the images and that the peak values dissipate gradually outward from the center. However, Braier is merely describing the type of image that is formed by an acid in the microbial colony. Applicant respectfully submits that Braier does not disclose, teach, or suggest a changing of the pixel intensities in the image, but rather is describing a natural phenomena. Accordingly, Application respectfully submits that Claims 11 and 26 are not obvious in light of Riglet, Mukherjee, Harrington, Avinash and Nichani and further in view of Braier. Applicant also submits that Claims 12 and 27 which depend from Claims 11 and 26 respectfully and incorporate all the limitations of the parent claim are therefore also not obvious in light of Riglet, Mukherjee, Harrington, Avinash and Nichani and further in view of Braier. Reconsideration and withdrawal of this rejection is respectfully requested.

Further, Applicant respectfully submits that the rejection of Claims 11, 12, 26 and 27 under 35 U.S.C. §103(a), as being unpatentable over Riglet, Mukherjee, Harrington, Avinash and Nichani and further in view of Braier et al. is improper. A claim is not proved obvious merely by demonstrating that each element was, independently, known in the prior art. KSR International Co. v. Teleflex Inc., 127 S.Ct. 1727, 1731, 82 U.S.P.Q.2d 1385 (U.S. 04/30/2007). In the examination of a claim, the Examiner needs to guard against hindsight arguments and ex post reasoning. See KSR 127 S.Ct. at 1732 (quoting Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)). The burden of a

prima facie case of obviousness requires that the Examiner show why the one of ordinary skill in the art, <u>at the time of invention</u> would have been obvious. Applicant respectfully submits that one of ordinary skill in the art at the time of invention would not find it obvious to use a Gaussian distribution created by an acid in a microbial colony to create a means of suppressing pixels in an image. Reconsideration and withdrawal of this rejection is respectfully requested.

With respect to Claims 15 and 16, Applicant respectfully submits that Claims 15 and 15 are not obvious in light of Riglet and Nichani in further view of Braier. As discussed above with respect to the rejection of Claims 11, 12, 26 and 27, Applicant submits that Braier does not disclose, teach or suggest a method of gradually reducing pixel intensity as a function of the distance from the object. Accordingly, Applicant respectfully request reconsideration and withdrawal of this rejection.

In view of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention and are therefore wholly inadequate in their teaching of the claimed invention as a whole, fail to motivate one skilled in the art to do what the patent Applicant has done, fail to recognize a problem recognized and solved only by the present invention, fail to offer any reasonable expectation of success in combining the References to perform as the claimed invention performs, fail to teach a modification to prior art that does not render the prior art being modified unsatisfactory for its intended purpose, and discloses a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

     If a communication with Applicant's Attorneys would assist in advancing this case to allowance, the Examiner is cordially invited to contact the undersigned so that any such issues may be promptly resolved.

     The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 07-0845.

     In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above-identified Deposit Account.

Respectfully submitted,

CANTOR COLBURN LLP

Applicant's Attorneys

By:_____

Dave S. Christensen
Registration No: 40,955
Customer No. 23413

Date: September 24, 2007
Address: 55 Griffin Road South, Bloomfield, Connecticut 06002
Telephone: (860) 286-2929
Fax: (860) 286-0115